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PRO-FLO™ Tailgate Spreader

Owner's Manual
Original Instructions

⚠ CAUTION

**Read this document before operating
or servicing the spreader.**

This manual is for WESTERN® PRO-FLO Spreaders with serial numbers
beginning with 115297 and higher.

This manual supersedes all editions with an earlier date.

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PREFACE

This manual has been prepared to acquaint you with the safety information, operation and maintenance of your new tailgate spreader. Please read this manual carefully and follow all recommendations. This will help ensure profitable and trouble-free operation of your spreader. Keep this manual accessible. It is a handy reference in case minor service is required.

When service is necessary, bring your spreader to your distributor. They know your spreader best and are interested in your complete satisfaction.

NOTE: This spreader is designed to spread snow and ice control materials only. Do not use it for purposes other than those specified in this manual.

Register your spreader online at www.westernplows.com

OWNER'S INFORMATION

Owner's Name: _____

Date Purchased: _____

Outlet Name: _____ Phone: _____

Outlet Address: _____

Vehicle Model: _____ Year: _____

Spreader Type (Model): _____ Serial #: _____

Length: _____ Weight: _____ lb/kg: _____

SAFETY

SAFETY DEFINITIONS

⚠ WARNING

Indicates a potentially hazardous situation that, if not avoided, could result in death or serious personal injury.

⚠ CAUTION

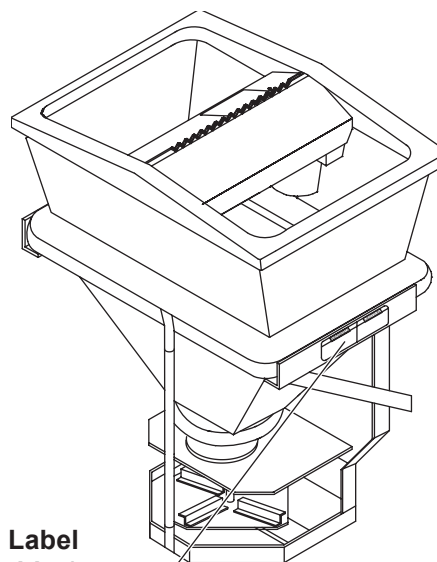
Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

NOTE: Indicates a situation or action that can lead to damage to your spreader and vehicle or other property. Other useful information can also be described.

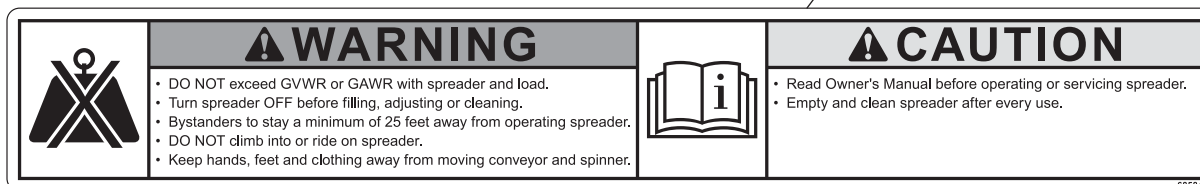
WARNING/CAUTION LABELS

Become familiar with and inform users about the warning and caution labels on the spreader.

NOTE: If labels are missing or cannot be read, see your sales outlet.



Warning/Caution Label
(located on both sides)

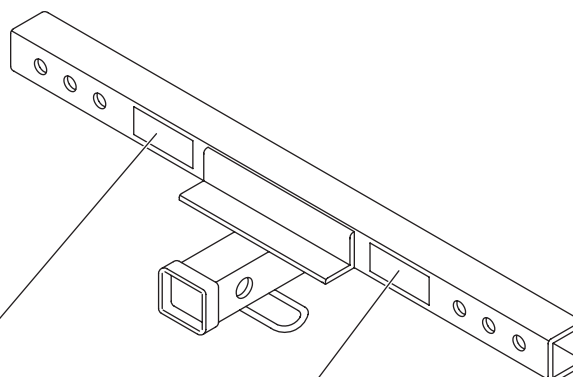


UNDER-FRAME MOUNT ASSEMBLY LABELS

The diagram below indicates the location of the safety and identification labels.

HITCH TYPE	MAX. GROSS TRAILER WEIGHT (LB)	MAX. TONGUE WEIGHT (LB)
WEIGHT DISTRIBUTING	10000	1000
WEIGHT CARRYING BALL AMOUNT	10000	1000

67181



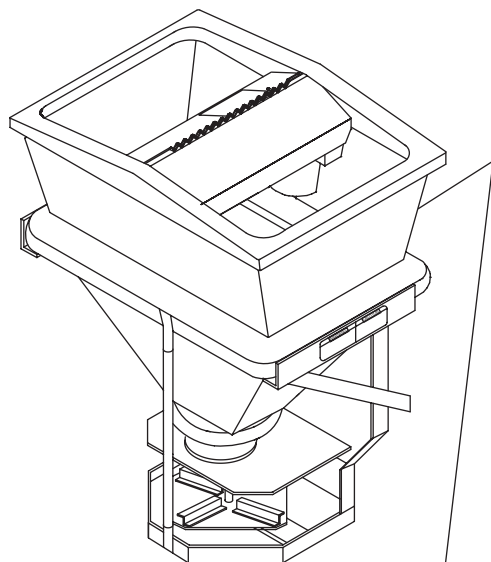
⚠ WARNING

DO NOT cut, drill, weld or modify this tube

67182

SAFETY

SERIAL NUMBER LABEL



(located on inside frame)

XXXXXXXXXXXXXXXXXXXXXXXXXXXX

YYMMDDLLXXXXZZZZZZ



Code	Definition
YY	2-Digit Year
MM	2-Digit Month
DD	2-Digit Day
LL	2-Digit Location Code
XXXX	4-Digit Sequential Number
ZZZZZZ	5- to 7-Digit Assembly PN

SAFETY PRECAUTIONS

Improper installation and operation could cause personal injury and/or equipment and property damage. Read and understand labels and the Owner's Manual before installing, operating, or making adjustments.

⚠ WARNING

- Driver to keep bystanders minimum of 25 feet away from operating spreader.
- Before working with the spreader, secure all loose-fitting clothing and unrestrained hair.
- Before operating the spreader, verify that all safety guards are in place.
- Before servicing the spreader, wait for conveyor, auger, and spinner to stop.
- Do not climb into or ride on spreader.

⚠ WARNING



Overloading could result in an accident or damage. Do not exceed GVWR or GAWR ratings as found on the driver-side vehicle door cornerpost. See Loading section to determine maximum volumes of spreading material.

⚠ WARNING

Do not install the control for this product in the deployment path of an air bag. Refer to vehicle manufacturer's manual for air bag deployment area(s).

⚠ CAUTION

If rear directional, CHMSL light, or brake stoplights are obstructed by the spreader, the lights shall be relocated, or auxiliary directional or brake stoplights shall be installed.

SAFETY

⚠ CAUTION

- Do not operate a spreader in need of maintenance.
- Before operating the spreader, reassemble any parts or hardware removed for cleaning or adjusting.
- Before operating the spreader, remove materials such as cleaning rags, brushes, and hand tools from the spreader.
- Before operating the spreader, read the engine owner's manual, if so equipped.
- While operating the spreader, use auxiliary warning lights, except when prohibited by law.
- Tighten all fasteners according to the Torque Chart. Refer to Torque Chart for the recommended torque values.

⚠ CAUTION

Disconnect electric and/or hydraulic power and tag out if required before servicing or performing maintenance.

⚠ CAUTION



DO NOT leave unused material in hopper. Material can freeze or solidify, causing unit to not work properly. Empty and clean after each use.

NOTE: Lubricate grease fittings after each use. Use a good quality multipurpose grease.

FUSES

The electrical system contains several blade-style automotive fuses. If a problem should occur and fuse replacement is necessary, the replacement fuse must be of the same type and amperage rating as the original. Installing a fuse with a higher rating can damage the system and could start a fire. Fuse Replacement, including fuse ratings and locations, is located in the Maintenance section of this Owner's Manual.

PERSONAL SAFETY

- Remove ignition key and put the vehicle in park or in gear to prevent others from starting the vehicle during installation or service.
- Wear only snug-fitting clothing while working on your vehicle or spreader.
- Do not wear jewelry or a necktie, and secure long hair.
- Wear safety goggles to protect your eyes from battery acid, gasoline, dirt, and dust.
- Avoid touching hot surfaces such as the engine, radiator, hoses, and exhaust pipes.
- Always have a fire extinguisher rated BC handy, for flammable liquids and electrical fires.

FIRE AND EXPLOSION

⚠ WARNING

Gasoline is highly flammable and gasoline vapor is explosive. Never smoke while working on vehicle. Keep all open flames away from gasoline tank and lines. Wipe up any spilled gasoline immediately.

Be careful when using gasoline. Do not use gasoline to clean parts. Store only in approved containers away from sources of heat or flame.

CELL PHONES

A driver's first responsibility is the safe operation of the vehicle. The most important thing you can do to prevent a crash is to avoid distractions and pay attention to the road. Wait until it is safe to operate Mobile Communication Equipment such as cell phones, text messaging devices, pagers or two-way radios.

SAFETY

VENTILATION

⚠ WARNING

Vehicle exhaust contains lethal fumes. Breathing these fumes, even in low concentrations, can cause death. Never operate a vehicle in an enclosed area without venting exhaust to the outside.

BATTERY SAFETY

⚠ CAUTION

Batteries normally produce explosive gases which can cause personal injury. Therefore, do not allow flames, sparks, or lit tobacco to come near the battery. When charging or working near a battery, always cover your face and protect your eyes, and also provide ventilation.

- Batteries contain sulfuric acid, which burns skin, eyes, and clothing.
- Disconnect the battery before removing or replacing any electrical components.

NOISE

Airborne noise emission during use is below 70 dB(A) for the spreader operator.

VIBRATION

Operating spreader vibration does not exceed 2.5 m/s² to the hand-arm or 0.5 m/s² to the whole body.





TORQUE CHART

⚠ CAUTION





Read instructions before assembling. Fasteners should be finger tight until instructed to tighten according to the Torque Chart. Use standard methods and practices when attaching spreader, including proper personal protective safety equipment.

Recommended Fastener Torque Chart

Inch Fasteners Grade 5 and Grade 8

Size	Torque (ft-lb)		Size	Torque (ft-lb)	
	 Grade 5	 Grade 8		 Grade 5	 Grade 8
1/4-20	8.4	11.9	9/16-12	109	154
1/4-28	9.7	13.7	9/16-18	121	171
5/16-18	17.4	24.6	5/8-11	150	212
5/16-24	19.2	27.3	5/8-18	170	240
3/8-16	30.8	43.6	3/4-10	269	376
3/8-24	35.0	49.4	3/4-16	297	420
7/16-14	49.4	69.8	7/8-9	429	606
7/16-20	55.2	77.9	7/8-14	474	669
1/2-13	75.3	106.4	1-8	644	909
1/2-20	85.0	120.0	1-12	704	995

Metric Fasteners Class 8.8 and 10.9

Size	Torque (ft-lb)		Size	Torque (ft-lb)	
	 Class 8.8	 Class 10.9		 Class 8.8	 Class 10.9
M6 x 1.00	7.7	11.1	M20 x 2.50	325	450
M8 x 1.25	19.5	26.9	M22 x 2.50	428	613
M10 x 1.50	38.5	53.3	M24 x 3.00	562	778
M12 x 1.75	67	93	M27 x 3.00	796	1139
M14 x 2.00	107	148	M30 x 3.50	1117	1545
M16 x 2.00	167	231	M33 x 3.50	1468	2101
M18 x 2.50	222	318	M36 x 4.00	1952	2701

These torque values apply to fasteners except those noted in the instructions.

LOADING

This Owner's Manual covers vehicles that have been recommended for carrying the tailgate spreader. Please see your local dealer for proper vehicle applications.

CERTIFICATION

WARNING

New untitled vehicle installation of a spreader requires National Highway Traffic Safety Administration altered vehicle certification labeling. Installer to verify that struck load of snow or ice control material does not exceed GVWR or GAWR rating label and complies with FMVSS.

WARNING

The use of under-frame or in-bed mounts on half-ton trucks is restricted to spreading only salt or calcium chloride. (Max. 80 lb per cu ft.) Failure to comply could result in exceeding the payload capacity.

WARNING

Overloading could result in an accident or damage. Do not exceed GVWR or GAWR as found on the driver-side cornerpost of vehicle.

CAUTION

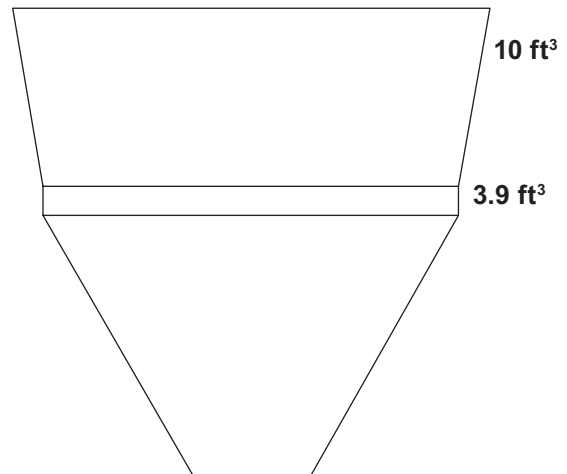


Read and adhere to manufacturer's ice-control material package labeling, including Material Safety Data Sheet requirements.

MATERIAL WEIGHTS

Material	Density		
	(lb/ft ³)	(lb/yd ³)	(kg/m ³)
Salt	80	2160	1282
Sand	100	2700	1602

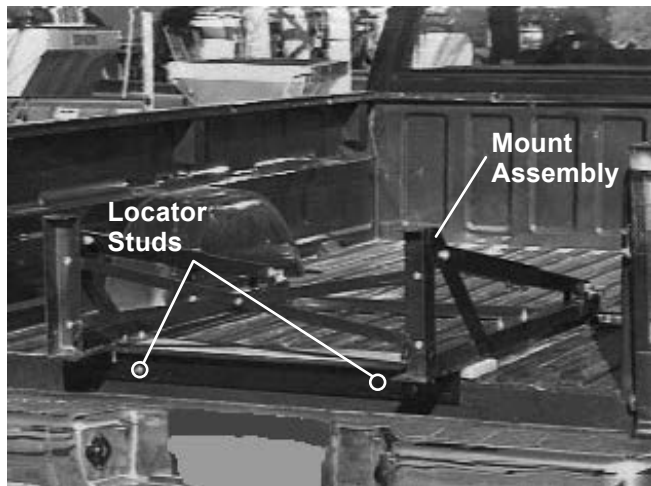
Material densities are approximate and are based on dry, loose material. It is the responsibility of the operator to know the weight of the material to be spread and the vehicle carrying capacity.



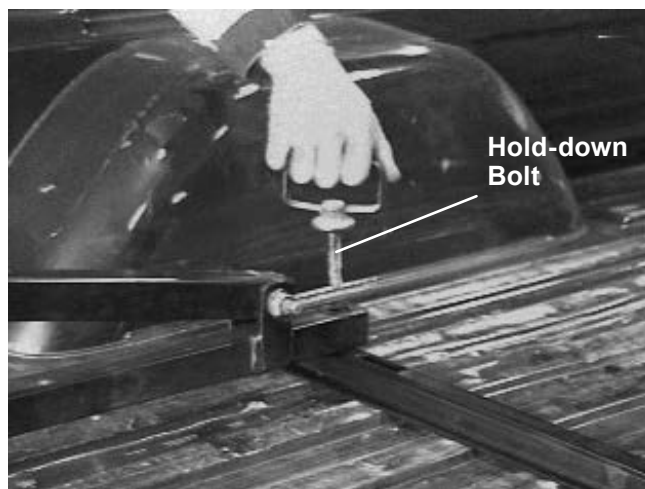
MOUNTING THE SPREADER

In-Bed Mount

1. Remove the tailgate from the vehicle.
2. Place the mount assembly into the bed of the vehicle.
3. Slide the assembly forward engaging the locator studs.



4. Secure the front of the mount assembly to the channel using hold-down bolts. Hand tighten.



NOTE: Pay special attention when drilling or clamping dissimilar metals to aluminum bodies. Galvanic corrosion can occur if not handled properly. Contact vehicle manufacturer for recommended attachment practices.

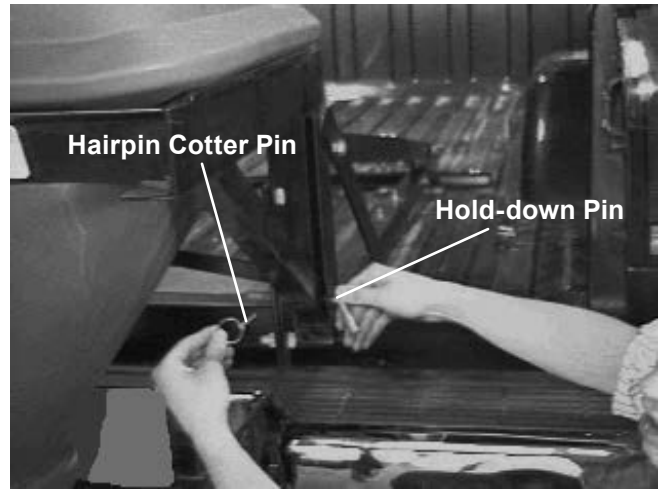
NOTE: Apply a small amount of grease to the bolt thread periodically to ensure easy removal.

MOUNTING THE SPREADER

5. Lift the hopper assembly using a hoist or two people, and tip slightly forward.



8. Insert hold-down pins and secure with hairpin cotter pins.



6. Position the tabs of the hopper assembly over the top of the mount assembly, and lower.

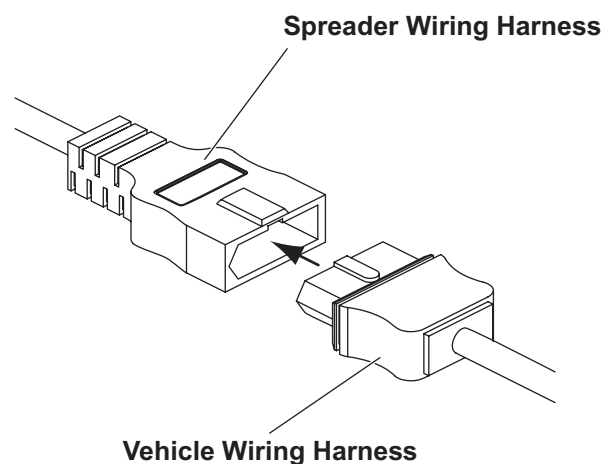


7. Allow the hopper assembly to lower into position.

⚠ CAUTION

Both hold-down pins must be in place and secured with hairpin cotter pins. The hopper assembly may become unstable if the pins are not properly secure while the vehicle is in motion. Never use a finger to check alignment.

9. Connect the spreader wiring harness to the vehicle wiring harness.



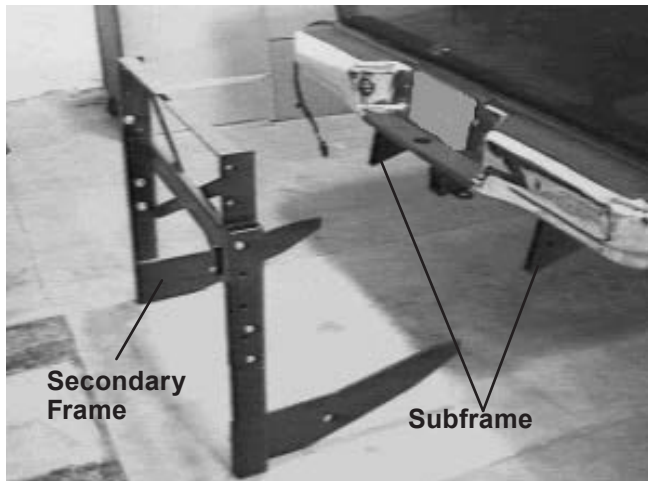
10. Verify proper stoplight and spreader operation.

NOTE: Grease all electrical connections with dielectric grease.

MOUNTING THE SPREADER

Under-Frame Mount

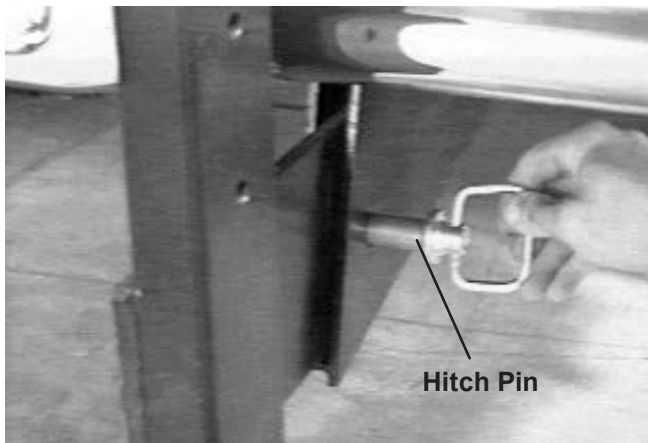
1. Install the secondary frame into the subframe.



⚠ CAUTION

Visually check Hitch Pin holes before assembly. Never use a finger to check alignment.

2. Insert the hitch pin on each side, and secure with linchpins.



3. Lift the hopper assembly using a hoist or two people, and tip slightly forward.



⚠ CAUTION

Visually align tabs into the secondary frame.

4. Position tabs on the hopper assembly over the top of the mount assembly, and lower the assembly.

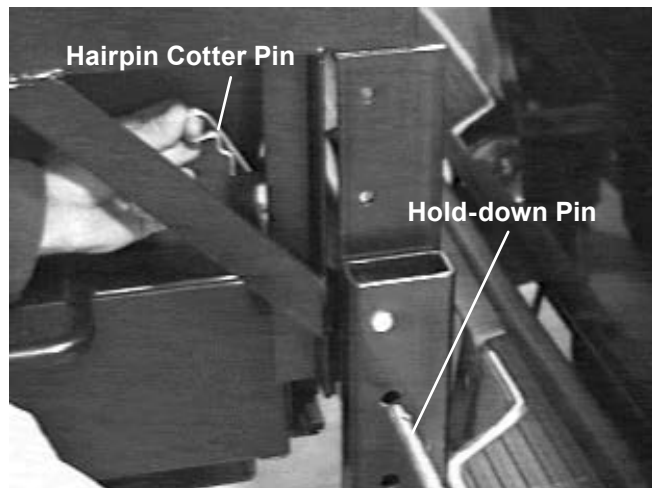


MOUNTING THE SPREADER

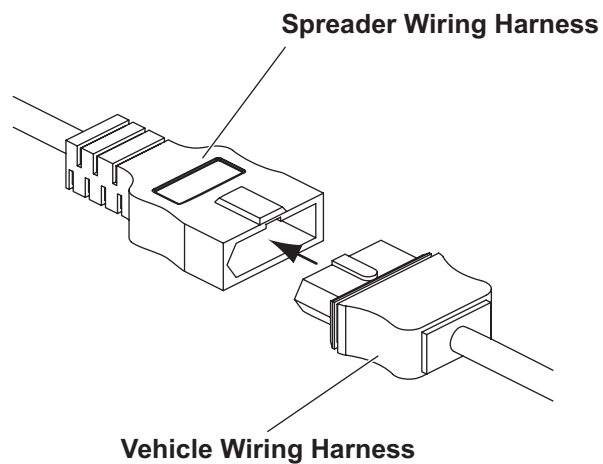
⚠ CAUTION

Both hold-down pins must be in place and secured with hairpin cotter pins. The hopper assembly may become unstable if the pins are not properly secure while the vehicle is in motion. Never use a finger to check alignment.

5. Insert pin on each side and secure with hairpin cotter pin.



6. Connect spreader wiring harness to the vehicle wiring harness.



NOTE: Grease all electrical connections with dielectric grease.

7. Verify proper stoplight and spreader operation.

OPERATING THE SPREADER

WARNING

Never operate equipment when under the influence of alcohol, drugs, or medications that might alter your judgment and/or reaction time.

WARNING

Never exceed 45 mph (72 km/h) when loaded spreader is attached to vehicle. Braking distances may be increased and handling characteristics may be impaired at speeds above 45 mph (72 km/h).

WARNING

Never allow children to operate or climb on equipment.

Driving and Spreading on Snow and Ice

Follow your vehicle owner's manual instructions for driving in snow and ice conditions. Remember when you drive on snow or ice, your wheels will not get good traction. You cannot accelerate as quickly, turning is more difficult and you will need longer braking distance. Wet and hard packed snow or ice offers the worst tire traction. It is very easy to lose control. You will have difficulty accelerating. If you do get moving, you may have poor steering and difficult braking which can cause you to slide out of control.

Here are some tips for driving in these conditions:

- Drive defensively.
- Do not drink, then drive or spread snow and ice control materials.
- Spread or drive only when you have good visibility for operating a vehicle.
- If you cannot see well due to snow or icy conditions, you will need to slow down and keep more space between you and other vehicles.
- Slow down, especially on higher speed roads. Your headlamps can light up only so much road ahead.
- If you are tired, pull off in a safe place and rest.
- The spreader's size and location reduce driver visibility to the rear of the vehicle. We recommend an OSHA compliant backup alarm for all governed employers.
- Keep your windshield and all glass on your vehicle clean to see around you.
- Dress properly for the weather. Wear layers of clothing; as you get warm, you can take off layers.

Accessory Circuit

The yellow wire in the vehicle harness is provided for accessory use of 12 amps or less.

OPERATING THE SPREADER

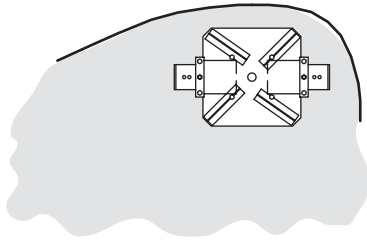
Adjusting Feed Gates and Deflector

Spread pattern, pattern width, and the amount of material dispensed are dependent on the spinner speed, gate position, and deflector position.

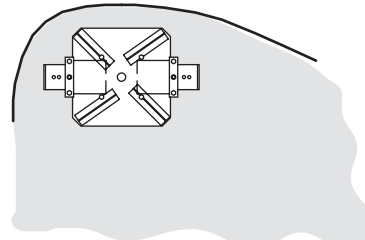
⚠ WARNING

Before making any adjustments to the gate/deflector settings, turn the spreader off. Wait for all conveyor, auger, and spinner movement to stop.

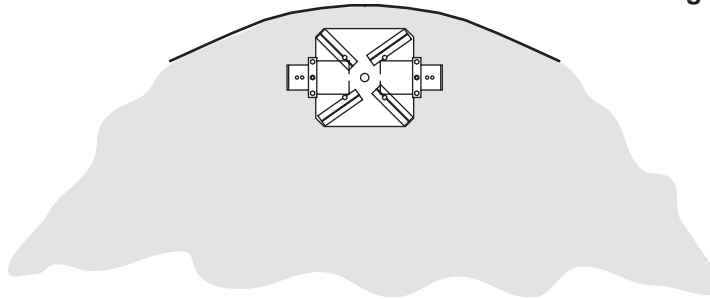
Deflector Effect



Driver side open.

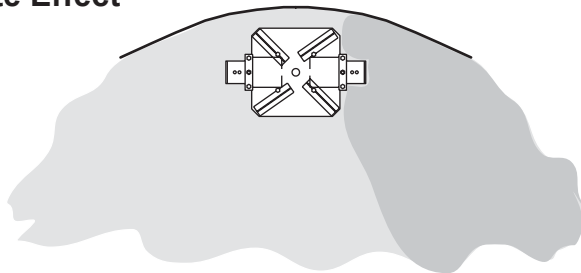


Passenger side open.

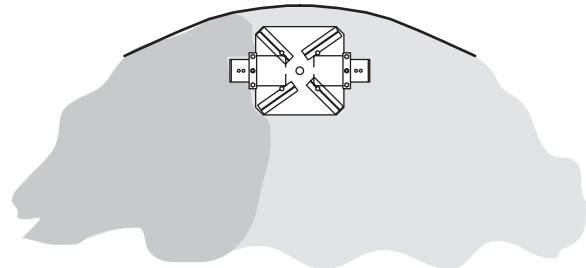


Both sides

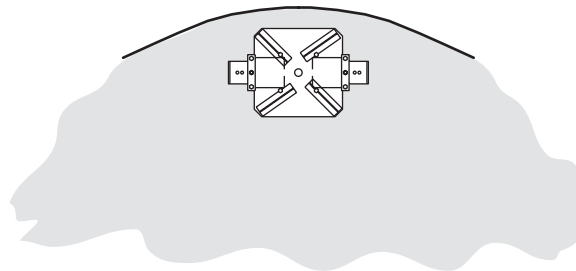
Gate Effect



**Passenger side gate closed.
Heavy on passenger side.**



**Driver side gate closed.
Heavy on driver side.**

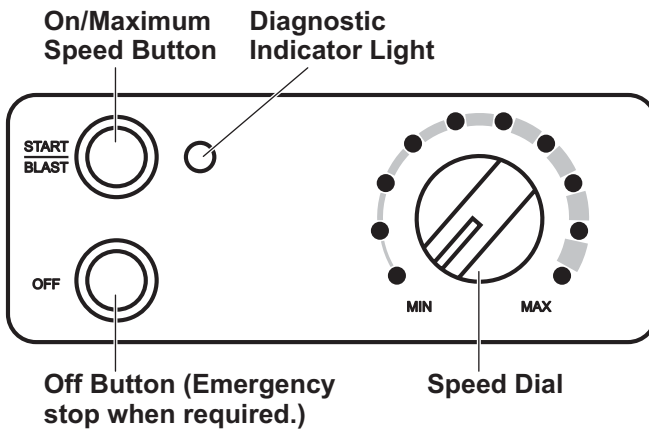


Both gates open.

OPERATING THE SPREADER

There are two control options. They include the Variable Speed (PWM) Control and the ON/OFF Control. The variable speed control was redesigned. Identify old or new style by the face plates shown for correct operating instructions.

Variable Speed (PWM) Control – New Style



⚠ WARNING

Before starting the spreader, the driver shall verify that all bystanders are a minimum of 25 feet away from operating spreader.

Starting and Stopping the Motor

1. To start the spreader motor, press the START/BLAST button and release. Both the START/BLAST and OFF buttons will be backlit when the motor is running. The spreader will operate at the speed selected on the speed dial.
2. Press the OFF button to stop the motor. The OFF button operates as emergency stop when required.

NOTE: The truck ignition must be on to start the spreader.

NOTE: If the truck ignition is turned off while the spreader is running, the motor will stop.

Adjusting the Spinner Speed

The speed setting can be adjusted when the spreader is either on or off.

1. Turn the speed dial clockwise. The speed will increase as the number of green LED's illuminated on the speed dial increase.
2. Turning the speed dial counterclockwise will decrease the speed.

Blast/Maximum Speed

1. Press and hold the START/BLAST button as long as maximum speed is needed.
2. Release the button when maximum speed is no longer needed. The control automatically returns to the ON position and the speed shown on the speed dial.

NOTE: When blast is used, the speed dial does not move to the maximum speed setting, but remains at the preset speed.

OPERATING THE SPREADER

Diagnostic Indicator Light

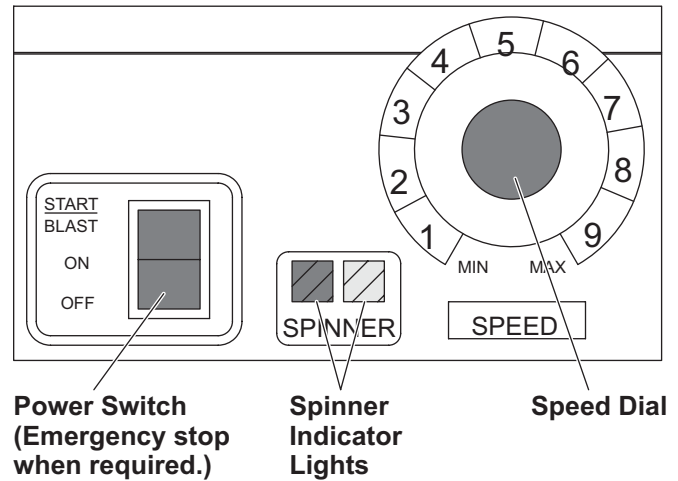
# of Flashes	Problem	Possible Causes
0	No fault.	—
2	No power.	Battery fuse is blown, or battery cable is disconnected or faulty
3	No motor.	Motor is disconnected.
4	No ground.	Spreader harness ground is disconnected or faulty.
5	Overheated.	Motor off due to controller overheat, possibly due to frozen or jammed spreader.
6	Excess current.	Over 35 amps for more than 1–2 seconds. (Higher overloads are allowed for shorter periods of time.)

The diagnostic indicator light located to the right of the START/BLAST button remains dark unless a problem with the motor or wiring is detected. The light will flash a number of flashes in a row, pause, then repeat. Count the flashes to determine the nature of the malfunction and refer to the diagnostic chart below.

If additional information is needed, refer to the Troubleshooting section of this manual.

NOTE: Always place the cover on the hopper to prevent moisture buildup. Do not let the spreader sit idle with material in the hopper for an extended period of time. This can cause the material to compact and reduce or stop the flow of material.

Variable Speed (PWM) Control – Old Style



⚠ WARNING

Before starting the spreader, the driver shall verify that all bystanders are a minimum of 25 feet away from operating spreader.

Starting and Stopping the Motor

1. To start the spreader motor, press the power switch to the START/BLAST position and release. This is a momentary position and the power switch will automatically return to the ON position when released. The spreader will operate at the speed selected on the speed dial.
2. Press the power switch to the OFF position to stop the motor. The power switch will remain in this position. The power switch OFF position operates as emergency stop when required.

NOTE: The truck ignition must be on to start the spreader.

NOTE: If the truck ignition is turned off while the spreader is running, the motor will stop.

OPERATING THE SPREADER

Adjusting the Spinner Speed

The speed setting can be adjusted when the spreader is either on or off.

1. Turn the speed dial clockwise. The speed will increase as the numbers on the speed dial increase.
2. Turning the speed dial counterclockwise will decrease the speed.

Blast/Maximum Speed

1. Press and hold the power switch in the START/BLAST position as long as maximum speed is needed.
2. Release the power switch when maximum speed is no longer needed. The switch automatically returns to the ON position and the speed shown on the speed dial.

NOTE: When blast is used, the speed dial does not move to the maximum speed setting, but remains at the preset speed.

Spinner Indicator Lights

Two lights on the cab control indicate the status of the motor:

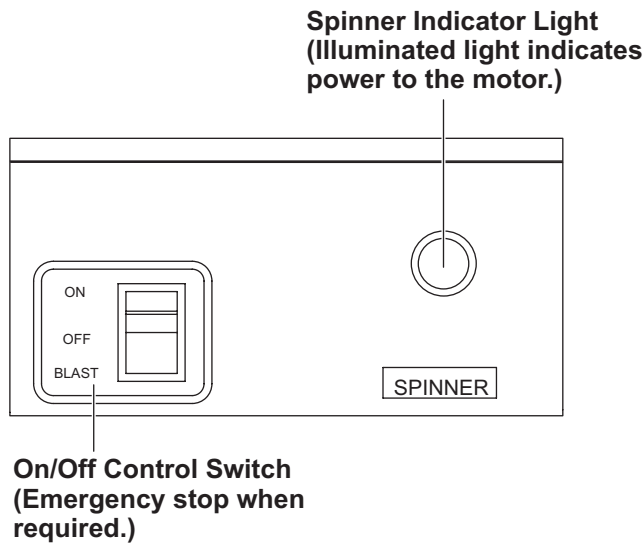
- Left light is red and indicates a fault. When the red (left) light is on, the power is on and the motor is not running.
- Right light is green and indicates power is on. When the green (right) light is on, there is power to the control and the motor is running.

If there are problems while operating the spreader, refer to the Troubleshooting section of this manual.

NOTE: Always place the cover on the hopper to prevent moisture buildup. Do not let the spreader sit idle with material in the hopper for an extended period of time. This can cause the material to compact and reduce or stop the flow of material.

OPERATING THE SPREADER

ON/OFF Control



Blast/Maximum Speed

Move and hold the power switch to the BLAST position for as long as maximum speed is needed. When released, the switch will automatically return to the OFF position and stop the motor.

If there are problems while operating the spreader, refer to the Troubleshooting section in this manual.

NOTE: Always place the cover on the hopper to prevent moisture buildup. Do not let the spreader sit idle with material in the hopper for an extended period of time. This can cause the material to compact and reduce or stop the flow of material.

⚠ WARNING

Before starting the spreader, the driver shall verify that all bystanders are a minimum of 25 feet away from operating spreader.

Starting and Stopping the Motor

1. Move the power switch to the ON position to start the motor. Motor will start immediately. The power switch will remain in this position.
2. Move the power switch to the OFF position to stop the motor. The power switch will remain in this position. The power switch OFF position operates as emergency stop when required.

NOTE: The truck ignition must be on to start the spreader.

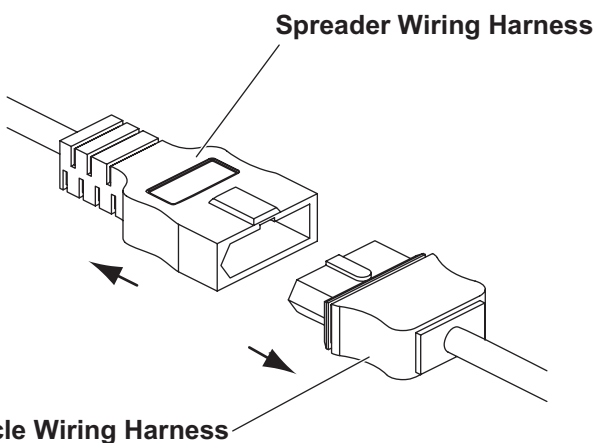
NOTE: If the truck ignition is turned off while the spreader is running, the motor will stop.

REMOVING THE SPREADER

In-Bed Mount

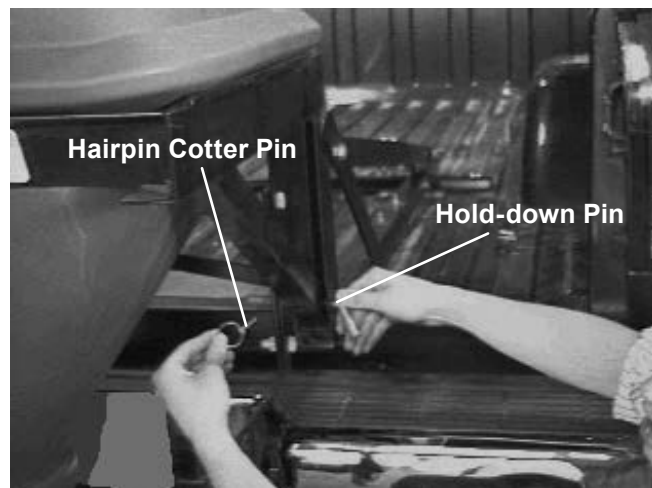
NOTE: Empty the hopper before removing the spreader.

1. Disconnect the spreader wiring harness from the vehicle wiring harness.



NOTE: Grease the electrical connections using dielectric grease.

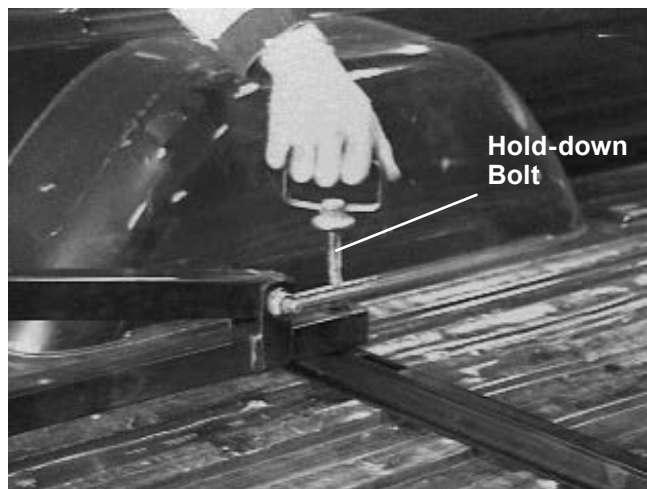
2. Install the plug cover over the vehicle harness plug.
3. Remove the hairpin cotter pins and hold-down pins.



4. Using a hoist or two people, tip the hopper assembly forward and lift it off of the mount assembly.



5. Loosen and remove the hold-down bolts from the front of the mount assembly.



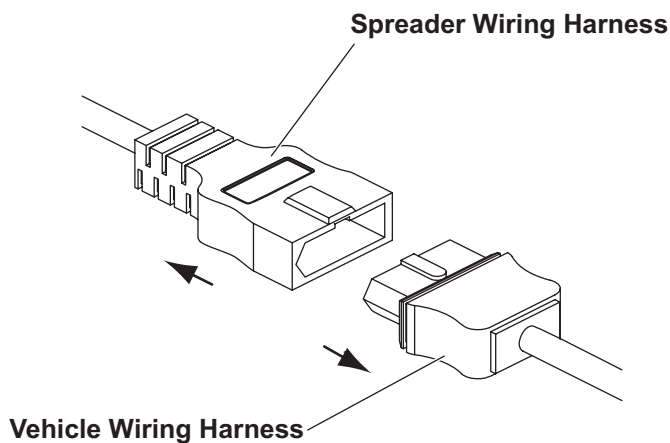
6. Remove the mount assembly from the vehicle.
7. Install the tailgate.

REMOVING THE SPREADER

Under-Frame Mount

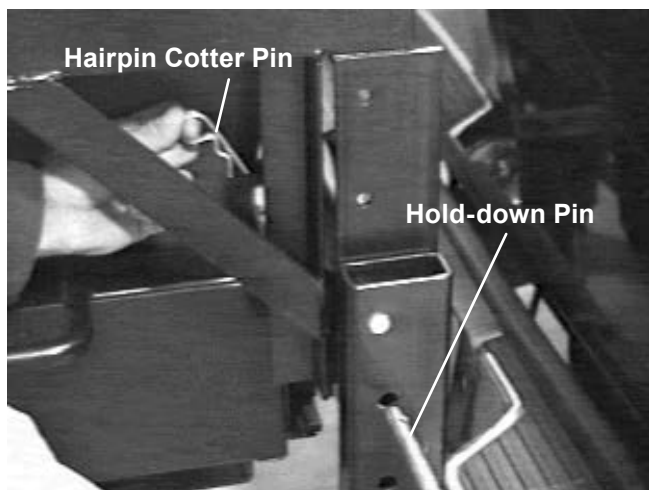
NOTE: Empty the hopper before removing the spreader.

1. Disconnect the spreader wiring harness from the vehicle wiring harness.



NOTE: Grease the electrical connections using dielectric grease.

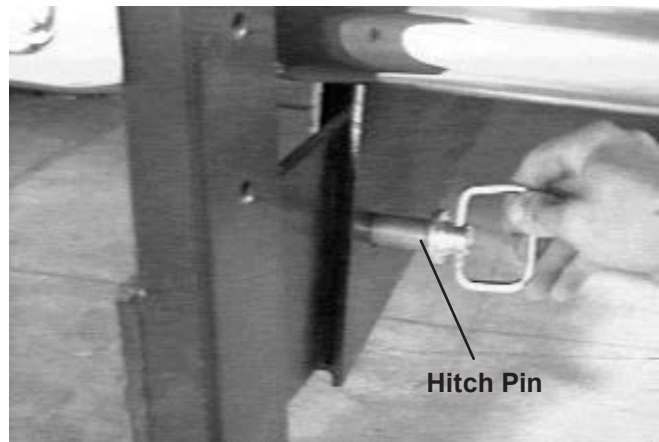
2. Install the plug cover over the vehicle harness plug.
3. Remove the hairpin cotter pins and the hold-down pins.



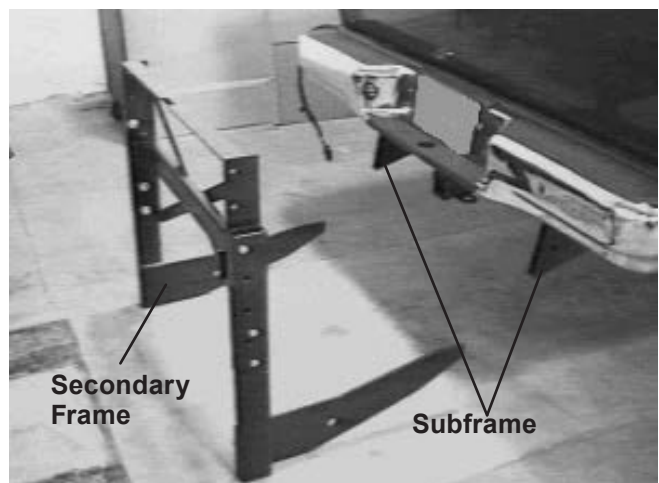
4. Using a hoist or two people, tip the hopper assembly forward and lift it off of the mount assembly.



5. Remove the linchpins and hitch pins retaining the secondary frame.



6. Remove the secondary frame assembly from the subframe.



RECEIVER HITCH

Safety

WARNING

- Do not overload any part of your towing system.
- Do not modify your hitch. Install only on specified vehicles which are in good condition.
- This product is designed to tow trailers. Do not use as cargo carriers, motorcycle carriers, boat hoists, or coupler alignment devices. Do not use as a jacking point. Do not attach anything with or in place of the ball.
- Do not pull multiple trailers. Towing one trailer behind another may cause severe instability and loss of control.

Important Information About Towing

Make sure all operators of your equipment read and understand this information before towing. This information will help you properly select, use, and maintain your towing equipment. Learn the capabilities and limitations of each part.

CAUTION

Never exceed the gross trailer weight or tongue weight of this equipment. Never exceed the lowest weight rating of any part of your towing system. See the Under-Frame Mount Assembly Labels area in the Safety section of this manual.

Gross trailer weight is the weight of the trailer plus the weight of the cargo. Measure gross trailer weight by putting the fully loaded trailer on a vehicle scale. Tongue weight is measured by placing the fully loaded trailer on a level surface with the coupler at normal towing height. Use a commercial scale to measure the weight at the coupler.

Ball Mounts/Drawbars

Select these products by their gross trailer weight and tongue weight ratings. Select hitches and receivers for specific vehicles. Do not purchase a ball mount or drawbar which will give more than a 4" drop or 7" extension as measured from the lower rear edge of the receiver.

Hitch Balls

Select by gross trailer weight rating, coupler socket size, and mounting platform thickness and hole size. Hole must not exceed threaded shank diameter by more than 1/16". Use lock washer. Tighten according to instructions. When tightened, shank must protrude beyond bottom of nut. Gross trailer weight rating and ball diameter are marked on balls.

Trailer Couplers

The coupler socket should be smooth, clean and lightly lubricated. Tighten or adjust according to the coupler manufacturer's instructions.

Safety Chains

Connect safety chains properly every time you tow. Cross chains under coupler. Attach securely to the hitch or tow vehicle so they cannot bounce loose. Leave only enough slack to permit full turning. Too much slack may prevent chains from maintaining control if other connections separate. Do not allow chains to drag along the road.

Electrical Connections

Make these safety-critical connections every time you tow, no matter how short the trip. Check operation, including electric brake manual control, before getting on the road.

RECEIVER HITCH

Sway Controls

Sway controls can lessen the effects of sudden maneuvers, wind gusts, and buffeting caused by other vehicles. We recommend sway controls for trailers with large surface areas, such as travel trailers. Adjustable friction models can help control the sway of travel trailers with low tongue weight percentages.

Other Useful Equipment

Air springs, air shocks, or helper springs are useful for some hitch applications. A transmission cooler may be necessary for heavy towing. Many states require towing mirrors on both sides.

Tire Inflation

Check often. Follow tow vehicle and trailer manufacturer's recommendations. Improper tire inflation can cause trailer sway.

Equipment and Parts Check

Check ball, coupler, chains, retaining pins and clips, and all other connections every time you tow. Re-check at fuel and rest stops.

No Passengers in Trailers!

Under no circumstances should people be allowed in trailers while towing.

Trailer Loading

Proper loading helps prevent sway. Place heavy objects on the floor ahead of the axle. Balance the load side to side and secure it to prevent shifting. Tongue weight should be 10–15% of gross weight for most trailers. Too low a percentage of tongue weight can cause sway. Never load the trailer rear-heavy; load the trailer front heavy.

Vehicle

The spreader operating vehicle shall be maintained according to the manufacturer's recommendations.

Driving

The additional weight of a trailer affects acceleration, braking, and handling. Allow extra time for passing, stopping, and changing lanes. Severe bumps can damage your towing vehicle, hitch, and trailer. Drive slowly on rough roads. Stop and make a thorough inspection if any part of your towing system strikes the road. Correct any problems before resuming travel.

Excessive Sway

Excessive sway can lead to loss of control. Sway motion should settle out quickly. Sway tends to increase on a downgrade. Starting slowly, increase the speed in gradual steps. If sway occurs, reduce speed slowly, stop, and adjust your trailer load and equipment. Repeat until the trailer is stable at highway speed. Do this whenever your trailer loading changes.

Controlling Trailer Sway

Turbulence from another vehicle, a wind gust, or a downgrade can cause sudden sway along with shift of the trailer's load or a trailer tire blowout. If the trailer sways, it is the driver's responsibility to assess the situation and take appropriate action. Below are the suggestions that may apply when assessing the situation. If your trailer starts to sway:

- Reduce your speed gradually.
- Hold steering wheel as steady as possible.
- If your trailer has electric brakes, apply the trailer brakes alone without using the tow vehicle's brakes.
- Do not hit your brake pedal hard unless absolutely necessary.
- Do not try to steer out of the sway condition. Sudden or violent steering can worsen the sway.
- Do not speed up or swaying will increase.
- Do not continue towing a trailer that tends to sway or you may lose control.

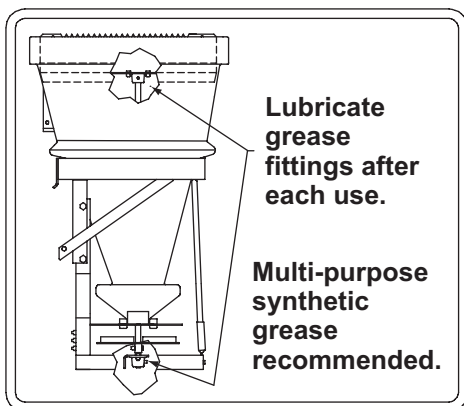
MAINTENANCE

⚠ CAUTION

Disconnect electric power at spreader electrical wiring harness connection and tag out if required before servicing or performing maintenance.

To keep your spreader running smoothly, observe the following recommendations:

- Lubricate grease fittings after each use and at the end of each season.



- Maintain proper motor to shaft belt tension.

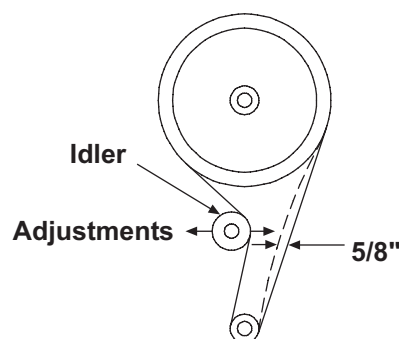
To adjust belt tension:

1. Loosen the carriage bolt that holds down the idler.
2. Slide the carriage bolt to increase or decrease tension.

⚠ CAUTION

Overtightening the belt may result in damage to the motor bearing.

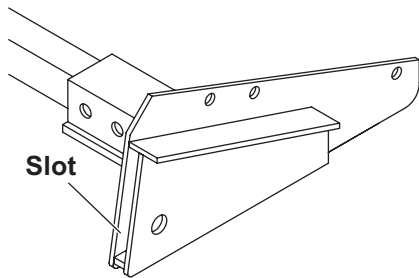
3. After adjusting the idler, tighten the carriage bolt.
4. After tightening the carriage bolt, the belt should deflect 5/8" between the pulleys.



MAINTENANCE

After each use

- Wash out hopper and rinse off all external surfaces.
- Wash out the secondary frame slots in the under-frame mount to prevent build-up of material.



- Use dielectric grease on all electrical connections to prevent corrosion at the beginning and end of the season and after each use.
- Lubricate all grease fittings with a low temperature synthetic grease.

At the end of each season (or extended storage)

- Wash out hopper and rinse off all external surfaces.
- Apply dielectric grease on all electrical connections to prevent corrosion.
- Lubricate all grease fittings with a low temperature synthetic grease.
- Oil or paint all bare metal surfaces.

FUSE REPLACEMENT

See the Harness Wiring Diagrams on the following pages for fuse ratings and locations.

If a problem should occur and fuse replacement is necessary, the replacement fuse must be of the same type and amperage rating as the original. Installing a fuse with a higher rating can damage the system and could start a fire.

Recycle

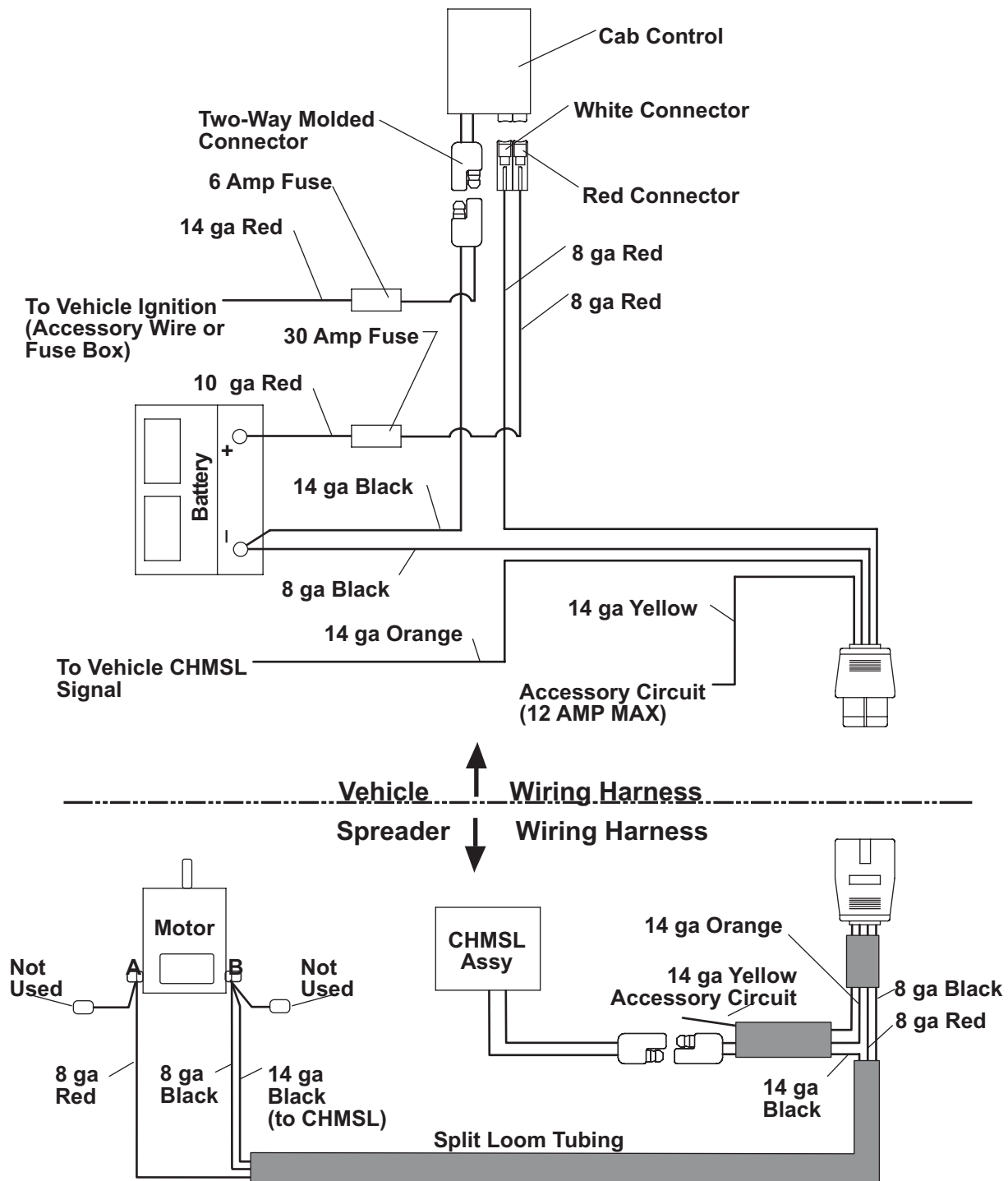
When your spreader has performed its useful life, the majority of its components can be recycled as steel. Gear oil shall be disposed of according to local regulations. Balance of parts made of plastic shall be disposed of in customary manner.

Gear Oil Specification

Use Mobil SHC 632 or Exxon SHP 320 or equivalent.

ELECTRICAL COMPONENTS

4-PIN HARNESS WIRING DIAGRAM



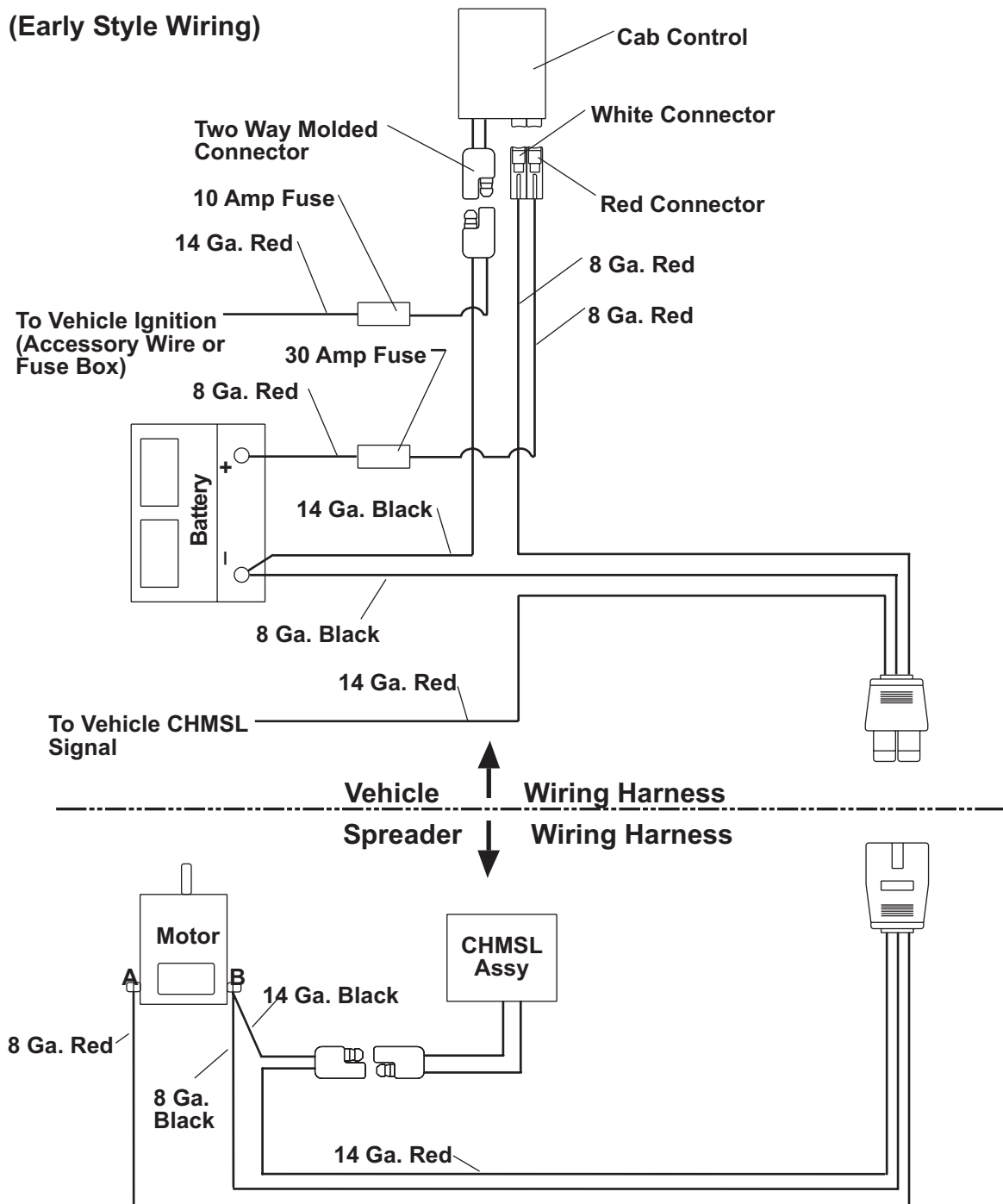
Motor Specification:

12 Volt DC, .56 kW Motor

ELECTRICAL COMPONENTS

3-PIN HARNESS WIRING DIAGRAM

(Early Style Wiring)



Motor Specification:

12 Volt DC, .56 kW Motor

TROUBLESHOOTING GUIDE

Please see your distributor for service. The troubleshooting reference table below may guide you in diagnosing the issue.

For control operation and use of diagnostic indicator lights, locate the section for your control style in the Operating the Spreader section of this manual.

Before servicing the spreader:

- Review all safety information.
- Confirm that all electrical connections are tight and clean.
- Confirm that nothing is jammed in the hopper.

Problem	Possible Cause	Suggested Solution
No power to cab control. Ignition and control switches ON; indicator light(s) not illuminated.	1. Control connector plug is loose.	1. Check plug connection at cab control.
	2. Battery lead in-line fuse is blown.	2. Change the fuse (4-pin harness, 6 amp fuse; 3-pin harness, 10 amp) and inspect for short circuits. Check power supply for 12V DC.
	3. Battery connection is poor.	3a. Check for low battery. 3b. Clean or replace ring terminal. Coat with dielectric grease.
	4. Battery wiring harness is damaged.	4. Repair or replace damaged wires or harness as required.
	5. Control circuit breaker is tripped. (ON/OFF Control only.)	5. Set the control to the OFF position. Reset the circuit breaker and set the control to the ON position.
Speed control dial on the Variable Speed (PWM) cab control does not change motor speed.	1. Malfunctioning cab control.	1. Replace cab control.
	2. Red and white connectors are incorrectly hooked up.	2. Reconnect so red matches red and white matches white.
Spreader does not operate. Indicator light(s) illuminated.	1. Overloaded condition is causing over-current protection to activate. (Variable Speed Control only.)	1. Reset cab control by turning the power OFF. Depress the START/BLAST switch to resume operation.
	2. Wire harness is damaged or has an open circuit between cab control and spreader.	2a. Check plug connections at cab control and spreader. 2b. Check wire connections at spreader motor and at vehicle battery – disconnect motor leads, turn control ON, set cab control to maximum on variable speed controls, and check for voltage at motor leads. 2c. Repair or replace damaged wires and connectors. 2d. Check the 30 amp in-line fuse. Replace if necessary.
	3. Spreader motor is not running.	3a. Replace motor if shaft will not turn. 3b. Remove and inspect both motor brushes. Replace if worn. (Brush kit 65241.)

TROUBLESHOOTING GUIDE

Problem	Possible Cause	Suggested Solution
Spinner does not turn. Motor is running.	Unplug the spreader harness and tag out, if required, before performing any of the following repairs.	
	1. Obstruction is preventing rotation.	1. Clear obstruction.
	2. Drive belt is loose or damaged.	2. Adjust the tension or replace the belt if worn or damaged.
	3. Motor pulley is not secured to motor shaft.	3. Tighten the pulley set screw or replace the pulley if damaged.
	4. Spinner pulley is not secured to spinner shaft.	4. Replace cap screw and nut if missing or damaged. Replace pulley if damaged.
	5. Spinner shaft bearings are dry or seized.	5. Grease or replace bearings.
Ice control material not flowing. Spinner is turning.	Unplug the spreader harness and tag out, if required, before performing any of the following repairs.	
	1. Bridging of material or obstruction in hopper.	1. Check hopper for material and free any bridged material or obstruction.
Spread pattern not optimum.	1. Deflector out of adjustment.	1. Change deflector adjustment to suit desired pattern. See Adjusting Feed Gates and Deflector in the Operating the Spreader section of this manual.

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